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Appl. No. 10/815,164
Response Dated March 19, 2007
Reply to Office Action of July 18, 2006

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Pending Claims:

This listing will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): A novel polyimide metal laminate manufactured by laminating a layer of a polyimide copolymer to a metallic foil which metal laminate is subjected to an etching process, said copolymer, which is a polyimide copolymer comprising two kinds of tetracarboxylic acid dianhydrides consisting of (A) isopropylidenebis (4-phenyleneoxy-4-phthalic acid) dianhydride and (B) 3,3', 4,4' -biphenyltetracarboxylic acid dianhydride, and (C) 6-amino-2-(p-aminophenyl)- benzimidazole and said polyimide copolymer being resistant to curling resulting from the metal laminate etching process.

Claim 2 (Currently amended): A metal laminate novel polyimide copolymer according to claim 1, wherein the copolymer has a film formability.

Claim 3 (Currently amended): A metal laminate novel polyimide copolymer according to Claim 1, wherein the two kinds of tetracarboxylic acid dianhydrides are used in a proportion of component (A) to component (B) of 10 – 80 mol.% to 90 – 20 mol.%.

Appl. No. 10/815,164
Response Dated March 19, 2007
Reply to Office Action of July 18, 2006

Claim 4 (Canceled)

Claim 5 (Canceled):

Claim 6 (Currently amended): A metal laminate according to Claim 5 1 for use as a flexible printed circuit board.

Claim 7 (Currently amended): A novel polyimide metal laminate manufactured by laminating a layer of a polyimide copolymer to a metallic foil which metal laminate is subjected to an etching processes, said copolymer, which is a polyimide copolymer comprising two kinds of tetracarboxylic acid dianhydrides consisting of (A) isopropylidenebis (4-phenyleneoxy-4-phthalic acid) dianhydride and (B) 3,3', 4, 4' -biphenyltetracarboxylic acid dianhydride, and two or three kinds of diamines consisting of (C) 6-amino-2-(p-aminophenyl) benzimidazole and (D) at least one kind of diamines consisting of bis(4-aminophenyl) ether (D₁) and phenylenediamine (D₂) and said polyimide copolymer being resistant to curling resulting from the metal laminate etching process.

Claim 8 (Currently amended): A metal laminate novel polyimide copolymer according to Claim 7, wherein the copolymer has a film formability.

Appl. No. 10/815,164
Response Dated March 19, 2007
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Claim 9 (Currently amended): A metal laminate novel polyimide copolymer according to Claim 7, wherein the two kinds of tetracarboxylic acid dianhydrides are used in a proportion of component (A) to component (B) of 10 – 80 mol% to 90 – 20 mol% and the diamines are used in a proportion of component (C) to component (D₁) of not less than 60 mol.% to not more than 40 mol.%.

Claim 10 (Currently amended): A metal laminate novel polyimide copolymer according to Claim 7, wherein the two kinds of tetracarboxylic acid dianhydrides are used in a proportion of component (A) to component (B) of 10 – 80 mol% to 90 – 20 mol.%, and the diamines are used in a proportion of component (C) to component (D₂) of not less than 20 mol.% to not more than 80 mol.%.

Claims 11-14 (Canceled)

Claim 15 (Currently amended): A metal laminate according to Claim 13 7 for use as a flexible printed circuit board.

Claim 16 (Canceled)

Appl. No. 10/815,164
Response Dated March 19, 2007
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Claim 17 (Currently amended): A process for manufacturing a metal laminate laminated with a polyimide copolymer layer, said process comprising the steps of:

- a) layer, characterized by subjecting two kinds of tetracarboxylic acid dianhydrides consisting of (A) isopropylidenebis (4-phenyleneoxy-4-phthalic acid) dianhydride and (B) 3,3',4,4' -biphenyltetracarboxylic acid dianhydride to reaction with one kind of diamine consisting of (C) 6-amino-2-(p-aminophenyl) benzimidazole or two or three kinds of diamines consisting of component (C) and (D) at least one kind of diamines consisting of bis(4-aminophenyl) ether (D₁) and phenylenediamine (D₂) in a polar solvent, solvent to form a solution of polyamic acid;
- b) applying the resulting solution of polyamic acid in the polar solvent from step a) to a metallic foil, and then foil;
- c) drying the solvent off and off, followed by heating the polyamic acid to a polyimidization reaction temperature to form a metal laminate; and temperature.
- d) subjecting the metal laminate to an etching process in which the polyimide copolymer layer resists curling.